

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS

1. *(previously presented)*: A recombinant attenuated coxsackievirus B4 virion which is engineered to contain a heterologous non-coxsackievirus nucleic acid inserted within the P1 region of the open reading frame of its genome which inserted nucleic acid encodes a non-coxsackievirus heterologous polypeptide which is fused to a capsid protein of the virion.
2. **CANCELED**
3. **CANCELED**
4. and 5. **canceled (previously)**
6. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 1 [[3]] wherein the heterologous polypeptide is situated within an immunogenic region of the viral capsid protein.
7. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 6 wherein the heterologous nucleic acid is expressed as an internal fusion of VP1.
8. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 6 wherein the viral capsid protein is VP1.
9. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 8 wherein the immunogenic region of VP1 comprises a B-cell epitope, a T-cell epitope, or both a B cell epitope and a T cell epitope.
10. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 8 wherein the heterologous polypeptide is situated within VP1 at a position which corresponds to the DE loop.
11. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 10 wherein the heterologous nucleic acid is directly downstream of codon 129 of VP1 coding sequences.
12. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 11 wherein the nucleic acid sequence corresponding to VP1 codons 130-135 of wild type CB4[[-P]] is deleted.

13. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 1 [[3]] wherein the heterologous nucleic acid is inserted in-frame and directly upstream of sequences which encode VP4, with the proviso that the insertion is optionally directly 3' from the AUG codon beginning at nucleotide 744 of the ~~coxsackievirus~~ CB4 RNA genome that encodes the N-terminal Met of native viral polypeptide.

14. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 13 wherein the heterologous polypeptide is expressed as an amino-terminal fusion of the viral polypeptide.

15. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 14 wherein the amino-terminal fusion is susceptible to cleavage from the viral polypeptide by a viral protease.

16. **cancelled (previously)**

17. *(currently amended)*: The recombinant [[CB4-P]] virion of Claim 14 wherein the length of inserted heterologous nucleic acid is from about 60 to about 360 nucleotides.

18. *(previously presented)*: A nucleic acid comprising the complete genome of a recombinant attenuated coxsackievirus B4 virion which is engineered to contain a heterologous non-coxsackievirus nucleic acid insert which is inserted within the P1 region of the open reading frame of its genome, wherein the insert encodes a non-coxsackievirus heterologous polypeptide which in the virion is fused to a capsid protein.

19. **CANCELED**

20. **CANCELED**

21. *(currently amended)*: The nucleic acid of Claim 18 [[20]] which is an infectious cDNA of the CB4[[-P]] genome.

22. *(currently amended)*: The nucleic acid of Claim 18 [[20]] which is an infectious RNA of the CB4[[-P]] genome

23. **canceled (previously)**

24. *(currently amended)*: The nucleic acid of Claim 18 [[20]] wherein the insert is in the coding region of VP1.

25. *(previously presented)* The nucleic acid of Claim 24 wherein the insert is in sequences which encode the DE loop of VP1.

26. *(previously presented)* The nucleic acid of Claim 25 wherein the insert is directly downstream of codon 129 of the VP1 coding sequences.

27. *(currently amended):* The nucleic acid of Claim 26 wherein the nucleic acid sequence corresponding to VP1 codons 130-135 of wild type CB4[[-P]] is deleted.

28. *(currently amended):* The nucleic acid of Claim 18 ~~[[20]]~~ wherein the insert is in-frame and directly upstream of sequences which encode VP4, with the proviso that the insert is optionally 3' from the AUG codon, at nucleotide positions 744-746 of the ~~coxsaekievirus~~ CB4 RNA genome, that encodes the N-terminal Met of native viral polyprotein.

29 **cancelled (previously)**

30. *(previously presented):* The nucleic acid of Claim 26 wherein the insert is from about 25 nucleotides to about 39 nucleotides in length.

31. *(currently amended):* The nucleic acid of Claim 26 wherein the polypeptide is immunogenic when fused to ~~[[CB4-P]]~~ the VP1 capsid protein.

32. *(previously presented):* The nucleic acid of Claim 31 wherein the insert encodes a T cell epitope, a B cell epitope, or both a T cell epitope and a B cell epitope.

33. *(previously presented):* The nucleic acid of Claim 31 wherein the insert encodes a viral polypeptide or a peptide epitope thereof.

34. *(previously presented):* The nucleic acid of Claim 31 wherein the insert encodes a polypeptide or a peptide epitope of a bacterial pathogen.

35. *(previously presented):* The nucleic acid of Claim 31 wherein the insert encodes an HIV polypeptide or a peptide epitope thereof.

36. *(previously presented):* The nucleic acid of Claim 35 wherein the insert encodes HIV p24 or a peptide epitope thereof.

37 to 53. cancelled (previously)

54. *(withdrawn)*: A method for inducing an immune response to a polypeptide in a subject, comprising administering the recombinant attenuated coxsackievirus B4 virion of claim 1 to the subject under conditions appropriate for infection by the virion.

55. CANCELED

56. *(withdrawn)*: The method of Claim 54 wherein the recombinant attenuated coxsackievirus B4 virion is formulated with a physiologically acceptable carrier.

57. *(previously amended/withdrawn)*: The method of Claim 54 wherein the immune response comprises the generation of a cytotoxic T-cell response, a T helper cell response, a B cell response, or any combination thereof.

58. *(withdrawn)*: The method of Claim 54 wherein the heterologous nucleic acid encodes a T-cell epitope.

59. *(currently amended; withdrawn)*: A method for inducing an immune response to a polypeptide in a subject, comprising administering a recombinant attenuated CB4[[-P]] virion comprising the nucleic acid of claim 32 to the subject under conditions appropriate for infection by the virion.

60. *(currently amended /withdrawn)* : A method for inducing an immune response to a polypeptide in a subject, comprising administering the recombinant attenuated CB4[[-P]] virion of claim 7 to the subject under conditions appropriate for infection by the virion.

61. *(currently amended; withdrawn)*: A method for inducing an immune response to a polypeptide in a subject, comprising administering the recombinant attenuated CB4[[-P]] virion of claim 14 to the subject under conditions appropriate for infection by the virion.

62. *(currently amended; withdrawn)*: A method for inducing an immune response to a polypeptide in a subject, comprising administering the recombinant attenuated CB4[[-P]] virion of claim 15 to the subject under conditions appropriate for infection by the virion.

63. *(currently amended; withdrawn)*: A method for inducing an immune response to a bacterial polypeptide in a subject, comprising administering a recombinant attenuated CB4[[-P]] virion comprising the heterologous nucleic acid of claim 34 to the subject under conditions appropriate for infection by the virion.

64. *(withdrawn)*: The method of Claim 63 wherein the immune response prevents or inhibits progression of a disease in the subject caused by bacteria comprising the heterologous bacterial polypeptide.
65. *(currently amended; withdrawn)*: A method for inducing an immune response to a viral polypeptide in a subject, comprising administering a recombinant attenuated CB4[[-P]] virion comprising the nucleic acid of claim 33 to the subject under conditions appropriate for infection by the virion.
66. *(previously amended/withdrawn)*: The method of Claim 65 wherein the immune response prevents or inhibits progression of a disease in the subject caused by a virus comprising the heterologous viral polypeptide, wherein the heterologous viral polypeptide comprises a viral epitope.
67. *(previously amended/withdrawn)*: The method of Claim 65 wherein the immune response inhibits progression of the disease and the viral polypeptide is an HIV polypeptide or a peptide epitope thereof.
68. *(previously amended/withdrawn)*: The method of Claim 67 wherein the HIV polypeptide is p24 or a peptide epitope thereof.
69. *(withdrawn)*: The method of Claim 54 wherein the subject is human.
70. *(withdrawn)*: The method of Claim 54 wherein the subject is a nonhuman animal.
71. *(withdrawn)*: The method of Claim 54 wherein the subject is immunocompromised.
72. *(currently amended; withdrawn)*: A method for delivering a polypeptide to a subject, comprising administering to the subject, under conditions appropriate for infection, a recombinant attenuated coxsackievirus B4 virion which is engineered to comprise a non-coxsackievirus heterologous nucleic acid insert that is inserted within the open reading frame of the ~~coxsackievirus~~ CB4 genome, which insert encodes the polypeptide being delivered, which polypeptide is
- (i) a heterologous non-coxsackievirus polypeptide fused to a capsid protein of the virion,
 - (ii) expressed as an amino-terminal fusion with ~~coxsackievirus~~ CB4 viral polyprotein; and
 - (iii) susceptible to cleavage by a viral protease that cleaves the heterologous polypeptide from the viral polyprotein,
- thereby delivering the polypeptide.

73. *(previously presented)*: A recombinant attenuated coxsackievirus B4 virion consisting of a coxsackievirus B4 genome and a non-coxsackievirus heterologous nucleic acid inserted within the P1 region of the open reading frame of the genome, which inserted nucleic acid encodes a heterologous polypeptide which is fused to a capsid protein of the virion.

74 to 78. cancelled (previously)